

What is claimed is:

1. A computer-implemented method for assigning resources to items, comprising:
 - identifying one or more assignment strategies for assigning one or more resources to one or more items;
 - for each identified assignment strategy, determining an assignment score for each item/resource pair;
 - summing the assignment scores for each item/resource pair;
 - multiplying each assignment score sum by an assignment cost associated with the sum's corresponding item/resource pair to produce a cost matrix; and
 - applying the Hungarian method to the cost matrix.
2. The method according to Claim 1, wherein the resources are buffers.
3. The method according to Claim 2, wherein at least one of the assignment strategies is chosen from the group consisting of strategies based on the storage level of the buffers, strategies based on the set-up time requirements of the buffers, strategies based on the priorities of storing items in the buffers, and strategies based on the compatibility of multiple items in a single buffer.
4. The method according to Claim 2, wherein all of the assignment strategies are chosen using Game theory from the group consisting of strategies based on the storage level of the buffers, strategies based on the set-up time requirements of the buffers, strategies based on the priorities of storing items in the buffers, and strategies based on the compatibility of multiple items in a single buffer.
5. The method according to Claim 1, wherein the resources are storage tanks.
6. A computer-readable medium having computer-executable instructions for performing a method comprising:
 - identifying one or more assignment strategies for assigning one or more resources to one or more items;
 - for each identified assignment strategy, determining an assignment score for each item/resource pair;

summing the assignment scores for each item/resource pair;
multiplying each assignment score sum by an assignment cost associated
with the sum's corresponding item/resource pair to produce a cost matrix; and
applying the Hungarian method to the cost matrix.

7. The method according to Claim 6, wherein the resources are buffers.

8. The method according to Claim 7, wherein at least one of the assignment
strategies is chosen from the group consisting of strategies based on the storage level of
the buffers, strategies based on the set-up time requirements of the buffers, strategies
based on the priorities of storing items in the buffers, and strategies based on the
compatibility of multiple items in a single buffer.

9. The method according to Claim 7, wherein all of the assignment strategies
are chosen from the group consisting of strategies based on the storage level of the
buffers, strategies based on the set-up time requirements of the buffers, strategies based
on the priorities of storing items in the buffers, and strategies based on the compatibility
of multiple items in a single buffer.

10. The method according to Claim 6, wherein the resources are storage tanks.